Microsoft

Drive efficiency with a software-defined datacenter

with Windows Server 2016

Rethink operations to boost efficiency, security

Datacenter operations seem to earn more scrutiny than budget these days. New applications stretch the operational fabric and create infrastructure backlogs that can slow down business. IT organizations are expected to do more with less, but an aging infrastructure with little automation becomes a hindrance to moving forward. Meanwhile, security breaches make front page news and reputations suffer.

As organizations look beyond server virtualization to achieve more efficiency, they can use Windows Server 2016 capabilities to meet operational and security challenges, freeing up IT resources to plan and innovate on future solutions that drive business success.

Automate routine datacenter operations

If a major goal is to gain scale without adding more cost, one strategy is the appropriate use of automation. IT organizations need to accommodate a growing number of business requests while maintaining existing applications and infrastructure. Organizations that have already wrung all available cost savings from server virtualization can consider virtualizing networking and storage. By doing so, they can reduce costs with less expensive hardware, eliminate complexity, and gain the ability to manage by policy, automation, and orchestration, versus manual and static configurations.

Substantial operational efficiencies are possible using PowerShell capabilities in Windows Server 2016, which enable IT admins to use one console to automate, deploy, configure, manage, and decommission applications, servers, settings, and users on one server or many. The enhanced Desired State Configuration environment can save time by defining the desired state and delivering automatic alerting and remediation if things go wrong. This automation helps IT admins offer infrastructure as a service to internal customers on a self-service basis to address the onslaught of deployment and configuration requests.

IT administrators now have new options for virtualized environments, enabling them to select and implement what makes sense for to increase efficiencies and reduce cost.

"What Microsoft achieved with Storage Spaces Direct is nothing short of incredible. Great performance, great flexibility at a great price. With the ability to use NVMe or SSD as a cache and SSD or HDD for capacity, together with RDMA network adapters, all performance needs are covered."

– David Knappett, Technical Architect
Alternative Networks

Maximizing efficiency

Here are three more ways Windows Server 2016 helps organizations increase efficiency and reduce cost.

Hyper-converged infrastructure

Hyper-efficient infrastructure. The ultimate expression of the software-defined datacenter tightly integrates the computing, networking, storage, virtualization, and hardware resources in a compute environment for simplicity and scalability. Windows Server 2016 can help organizations realize the benefits of hyper-converged environments.

Nano Server

Efficient OS. Reduce your datacenter footprint with Nano Server, a new remote-administered installation option for private clouds and datacenters. Minimize attack surface, increase availability, and reduce resource usage.

Cluster OS Rolling Upgrade

Efficient upgrades. Administrators can now upgrade server clusters from Windows Server 2012 R2 to Windows Server 2016 without stopping Hyper-V or Scale-Out File Server workloads.

Gain workload mobility, increase network security

Traditional network infrastructures are rigid and complex, making it time-consuming to deploy workloads that require network changes and increasing the chance for error. Organizations can achieve rapid scale and agility when they adopt a software-defined network (SDN) model for deployment and management. With SDN, every workload and tenant is deployed into a network overlay that provides the virtualized services that workloads need, such as switching, routing, load balancing, firewalls, and edge services. As a result, IT can automate workload deployment on-premises, or in Azure and service provider clouds, with no changes to the physical network infrastructure. SDN also helps protect against network attacks. IT can dynamically adjust workload protection with the ability to precisely model and rapidly change network segmentation and security policies based on evolving threat vectors.

Reduce storage costs

In a highly virtualized environment, the underlying storage system can affect overall performance. A traditional, manually configured storage system can prevent organizations from fully realizing the benefits of the software-defined datacenter. Software-defined storage capabilities in Windows Server 2016, such as Storage Spaces Direct, Storage Replica, Quality of Service, and data deduplication, use policies and automation to increase datacenter efficiency and reduce storage management costs.

Help secure your future at the OS level

Cyber criminals are more sophisticated than ever, using clever strategies to breach your datacenter and access critical business data. Using disparate tools from multiple vendors to configure solutions only adds to security headaches. With Windows Server 2016, security technologies are built into the virtualization platform to help secure the basic building block of virtualized computing—the virtual machine. Shielded Virtual Machines are ideal for business critical systems, including domain controllers and certificate servers. The VMs can run only on designated hardware and data stays encrypted, even if a VM is accidentally leaked or stolen by a rogue administrator. Other features, including Credential Guard and Device Guard, help protect stored credentials and keep rogue binaries from running.

IT departments also struggle to keep hackers off corporate networks. The new Network Function Virtualization firewall built into Windows Server 2016 helps organizations be more secure and efficient by allowing the firewall to be an integral part of the software-defined networking environment, including automation and orchestration of the firewall settings as the computing environment changes.

Take the next step. Learn more at
www.microsoft.com/en-us/cloud-platform/software-defined-datacenter

Options for managing your infrastructure

Microsoft offers a variety of infrastructure management solutions to work with any operations model.

Microsoft System Center 2016

Whether you have a few servers or thousands, System Center provides efficient deployment and management functionality for your virtualized, software-defined datacenter to bring you increased agility and performance.

PowerShell and Desired State Configuration

Define, deploy, and manage your software environment through PowerShell scripting and Desired State Configuration, using a single console.

Operations Management Suite

To manage and help protect workloads in multiple cloud types, you can extend management to Operations Management Suite (OMS) services for visibility and control across Azure, AWS, Windows Server, Linux, VMware, and OpenStack systems.

Microsoft